



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0939; Project Identifier MCAI-2022-00743-E; Amendment 39-22513; AD 2023-15-01]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Canada Corp. Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Pratt & Whitney Canada Corp. (P&WC) Model PW307D engines. This AD is prompted by a root cause analysis of an event involving an uncontained failure of a high-pressure turbine (HPT) 1st-stage disk, on an International Aero Engines AG (IAE) Model V2533-A5 engine, that resulted in high-energy debris penetrating the engine cowling and an aborted takeoff. This AD requires removing certain HPT 2nd-stage disks from service and also prohibits installation of certain HPT 2nd-stage disks on any affected engine. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No.FAA-2023-0939; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140,

1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all P&WC Model PW307D engines. The NPRM published in the *Federal Register* on May 11, 2023 (88 FR 30264). The NPRM was prompted by Transport Canada AD CF-2022-31, dated June 9, 2022, issued by Transport Canada, which is the aviation authority for Canada (referred to after this as the MCAI). The MCAI states that on March 18, 2020, an Airbus Model A321-231 airplane, powered by IAE Model V2533-A5 engines, experienced an uncontained HPT 1st-stage disk failure that resulted in an aborted takeoff and high-energy debris penetrating the engine cowling. In response to the March 2020 uncontained HPT 1st-stage disk failure, the FAA issued a series of ADs, including Emergency AD 2020-07-51, Amendment 39-21110 (85 FR 20402, April 13, 2020) (AD 2020-07-51). Since the FAA issued AD 2020-07-51, IAE determined that the failure of the V2533-A5 engine was due to an undetected subsurface material defect in the HPT 1st-stage disk that may affect the life of the part. In coordination with IAE, P&WC performed a records review and analysis of PW307A and PW307D engine parts made of similar material and identified two additional affected HPT 2nd-stage disks (S/Ns A004D8X1 and A004E9K3), installed on PW307D engines. These two additional HPT 2nd-stage disks may have a material defect which could reduce the life of the part. As such, the affected HPT 2nd-stage disks must be removed from service.

In the NPRM, the FAA proposed to require removing certain part-numbered HPT 2nd-stage disks from service and proposed to prohibit the installation of these HPT 2nd-stage disks onto any engine. The FAA is issuing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0939.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Costs of Compliance

The FAA estimates that this AD affects 2 engines installed on airplanes of U.S. Registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs				
Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Replace HPT 2nd-stage disk	10 work-hours x \$85 per hour = \$850	\$176,000	\$176,850	\$353,700

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-15-01 Pratt & Whitney Canada Corp.: Amendment 39-22513; Docket No. FAA-2023-0939; Project Identifier MCAI-2022-00743-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pratt & Whitney Canada Corp. (P&WC) Model PW307D engines.

(d) Subject

Joint Aircraft Service Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by a root cause analysis of an event involving an International Aero Engines AG Model V2533-A5 engine, which experienced an uncontained failure of a high-pressure turbine (HPT) 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. The FAA is issuing this AD to prevent failure of the HPT 2nd-stage disk. The unsafe condition, if not addressed, could result in uncontained HPT disk failure, damage to the engine, damage to the airplane, and loss of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

For engines with an HPT 2nd-stage disk, part number (P/N) 30P3182-01, with serial number (S/N) A004D8X1 or A004E9K3 installed, within 100 engine cycles after the effective date of this AD, remove the HPT 2nd-stage disk from service.

(h) Installation Prohibition

After the effective date of this AD, do not install any HPT 2nd-stage disk having P/N 30P3182-01 with S/N A004D8X1 or A004E9K3 on any engine.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Additional Information

(1) Refer to Transport Canada AD CF-2022-31, dated June 9, 2022, for related information. This Transport Canada AD may be found in the AD docket at regulations.gov under Docket No. FAA-2023-0939.

(2) For more information about this AD, contact Barbara Caufield, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

(k) Material Incorporated by Reference

None.

Issued on July 19, 2023.

Victor Wicklund, Deputy Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-15634 Filed: 7/24/2023 8:45 am; Publication Date: 7/25/2023]